International Cooperation in Space Activities for Enhancing Security in the Post-Cold War Era

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International Cooperation in Space Activities for Enhancing Security in the Post-Cold War Era

Report of the Secretary-General

United Nations

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Department of Political Affairs

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Contents

INTRODUCTION 3

I. Post-Cold War Challenges 6

A. Conversion of military technology 6

B. Commercialization and proliferation 8

C. Environmental protection 10

D. The new role of the United Nations 12

II. Enhancing Security Through Space Technology . . 13

A. International Space Policy 13

B. Arms control and disarmament 14

C. Scientific and technical cooperation 15

D. Commercialization of space activities 17

III. New Approaches to Space and Security 19

A. Confidence-building measures 19

B. Improving access to space technology 24

IV. Conclusion 29

Annexes

I. Multilateral Treaties Governing Space Activities . . 33

II. Principles on the Conduct of Space Activities 36

INDEX 39

Report of the
Secretary-General
of the United Nations

INTRODUCTION

1. The end of the cold war and the subsequent changes in the international security environment have raised new possibilities for the utilization of space technology to promote international peace, security and stability. In this new political environment, the United Nations Organization has taken on new functions, including preventive diplomacy, peacemaking and expanded peace-keeping operations, in addition to its continuing role in promoting economic and social development. Moreover, as indicated by the United Nations Conference on Environment and Development, held in 1992, the United Nations will be playing a more active role in ensuring the environmental security of all countries.

2. The rapid advancement of space technology in the past decade, the increasingly widespread use of that technology for essential economic and social services, and the new international political environment all suggest that the international community should seize the opportunity to ensure that space technology is effectively used to promote security in all its forms - political, military, economic and environmental - for the benefit of all countries. The United Nations must take a leadership role in encouraging Member States, especially those with significant space capabilities, to meet the challenges of the new era. The United Nations and the specialized agencies must develop new policies and programmes for the innovative use of space technologies in

the post-cold-war era. This will require creative thinking by the United Nations and all Member States.

3. Those changes in the political and technological context, combined with recent efforts to expand international cooperation in space, including International Space Year, in 1992, and the recommendation of the General Assembly, in its resolution 47/67 of 14 December 1992, that the Committee on the Peaceful Uses of Outer Space consider the possibility of holding in the future a third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, offer me an opportunity to address the complex issues involved in the utilization of space technology for enhancing international security. In addressing these issues I shall concentrate on those which in my view are of primary importance, keeping in mind the fact that all forms of security are interrelated and cannot be considered in isolation from each other.

4. It is my strong belief that the time has come to expand international cooperation in space activities, through both a revitalization of existing mechanisms and the development of new mechanisms for international cooperation. In addition, new initiatives should be taken to ensure that all countries have access to the benefits of space activities.

5. There are many security benefits that can be derived by the international community from greater utilization of space technology on a cooperative basis. The United Nations must ensure that the improved technologies

available for communications, information gathering, environmental monitoring and resource development are used for the benefit of all people, either through existing international organizations with responsibilities in those areas or, where necessary, through the establishment of new organizations. Through its global reach and global perspective, space technology can make a vital contribution to promoting international security.

6. As noted in my report on the new dimensions of arms regulation and disarmament in the post-cold-war era (A/C.1/47/7), we are now faced with many new post-disarmament issues. Among those that are particularly relevant to the use of space technology are the need for programmes to assist the transformation of military-oriented industrial complexes into enterprises serving social, humanitarian and development needs, the need to institute policies related to the commercialization and proliferation of advanced, dual-use technologies and the need for international environmental protection policies. All these issues, and the methods by which the international community faces them, are in turn affected by the new role of the United Nations in the post-cold-war era.

I. POST-COLD-WAR CHALLENGES

A. Conversion of military technology

7. Space technology in particular poses unique conversion challenges, together with unique advantages. One advantage is that the levels of technological development in that field in the United States of America and the Russian Federation are fairly equal, and both sides have much to gain from cooperation and collaboration in space activities. For the major space Powers and for other countries, space technology can continue to be an important driving force for technological and economic advancement.

8. The dual nature of much of space technology and the industrial infrastructure that supports it also lends itself to conversion. Many current space systems, such as satellites, launch vehicles and ground stations, are already routinely used for both military and civilian purposes, and the large number of ballistic missiles to be retired on the basis of disarmament agreements can, with some modification, be used as civilian satellite launchers.

9. While the super-Powers have traditionally made a sharp distinction between military and civilian space technology and have limited the most advanced technology to classified military use, the emergence of other space Powers with no military space programmes has promoted civilian use of the most advanced technology. With the end

of the cold war, the super-Powers have also begun to blur the boundary between military and civilian systems. In the field of satellite remote sensing, for example, commercially available imagery now shows details that were previously available only for military uses. Conversion of space technology, however, does pose quantitative problems. Conversion of all excess ballistic missiles to civilian launchers, for example, would saturate the market for some time, and could put launch vehicle manufacturers out of business. While a tank factory might be used to produce trucks or buses, a missile factory cannot easily be converted to other functions. A large increase in civilian space activity would be required to absorb the existing military capacity, and such an increase cannot be expected through commercial development alone.

10. These and other problems associated with the conversion of military aerospace industries were the focus of a United Nations-sponsored International Conference on Conversion of Aerospace Technology, held in Moscow in October 1992. That Conference, with almost 500 participants from Governments, academia and industry, promulgated the Moscow Declaration, a series of recommendations for international organizations, national policy makers and industry, which can serve as the basis for concerted international effort in this area. I urge the international community to support actively the recommendations of the Conference and to participate fully in the follow-up to that Conference and in other United Nations and international, regional and national conversion initiatives.

11. Among the recommendations addressed to international organizations by the Moscow Conference, the United Nations views as promising the proposed establishment of international centres for aerospace conversion, which would coordinate activities through the creation and interconnection of databases to exchange information, support the conversion efforts of national institutions, provide training and promote development of national conversion strategies. In particular, those centres could collect and disseminate information on successful conversion programmes so that they could become models for other countries. The United Nations will do what it can to facilitate the establishment of such centres. As I noted in my report on arms reductions and disarmament, I am also establishing an interdepartmental task force at the United Nations to provide Member States with political, technical and economic advice on the various aspects of the transition from military to civilian production.

B. Commercialization and proliferation

12. The transformation of many government space activities to commercial operation over the past decade has generated additional economic benefits, but has also created some problems. On the one hand, commercialization has allowed an increasing number of countries to take advantage of space technologies, including satellite communications, remote sensing and other applications, for national economic and social development. On the other hand, commercialization of space activities has increased the risks of advanced space technologies being used for

aggressive military purposes. For example, many satellite launch vehicle technologies are identical to those used for ballistic missile development, and information derived from high-resolution civilian remote sensing satellites can be used to support military planning and operations.

13. Wider access to military technologies, by making conflicts more destructive, can be expected to increase the economic and environmental impact of conflicts. In addition, countries that acquire access to advanced military technologies before their potential adversaries may be tempted to take advantage of this. Conversely, wider availability of other technologies, such as intelligence-gathering systems, could help prevent conflicts that otherwise might have begun because of misinformation or miscalculation.

14. The international community has taken a strong stance on the proliferation of nuclear weapons and weapons of mass destruction, evidenced most recently at the Security Council summit of January 1992, when the Council declared that proliferation constituted a major threat to international peace and security. While the Treaty on the Non-Proliferation of Nuclear Weapons offers a vital framework to halt the spread of nuclear weapons technology, it does not address the issues involved in the proliferation of missile and other military space technology.

15. In recent years some States have taken steps, both individually and multilaterally, to halt the proliferation of advanced military technologies, most notably through the

Missile Technology Control Regime and other supply-side controls. However, these measures raise international political problems because they are perceived by many countries of the world to be inequitable. The international community must devise more equitable and comprehensive approaches to the problem of ensuring that space technology is used for peaceful purposes and not for destruction. As with other elements of proliferation control and disarmament, any controls must be non-discriminatory and generally acceptable, if they are to be effective.

C. Environmental protection

16. Growing concerns over environmental security on the national, regional and international levels led to the convening of the United Nations Conference on Environment and Development at Rio de Janeiro, from 3 to 14 June 1992. At that Conference, the international community reached unprecedented agreement on a comprehensive set of policies that would need to be implemented in order to ensure that the Earth's resources are developed in a sustainable manner and to safeguard the global environment. Those policies are contained in Agenda 21, 1/ which lays out a detailed programme of action to be taken by the United Nations, other international organizations, national Governments and intergovernmental organizations. The cooperative spirit which characterized the Rio Conference and resulted in the elaboration of Agenda 21, the Rio Declaration on Environment and Development, a set of principles on the management of forests, the Framework Convention on Climate Change and

the Convention on Biological Diversity must now be translated into concrete programmes and projects.

17. In the spirit of Agenda 21, it may also be time to examine ways to formalize international cooperation in the utilization of space systems and space technology for environmental purposes, particularly the implementation of the programmes recommended in Agenda 21, to ensure that all countries can obtain the information they need to participate fully in the collective international effort. In particular, the international programmes started during International Space Year should be continued and expanded on a long-term basis as part of the implementation of Agenda 21. A report on the applications of space technology in the implementation of Agenda 21 is being prepared at the request of the Committee on the Peaceful Uses of Outer Space, and I strongly urge Member States to consider the recommendations of the Committee on the subject. Member States with space capabilities have in the past been extremely forthcoming in sharing environmental data with the international community. They should now contemplate making available to all countries, at low cost, satellite data for environmental protection purposes.

D. The new role of the United Nations

18. The role of the United Nations in international security continues to evolve. In my report, "An Agenda for Peace" (A/47/277-S/24111), I addressed several specific areas of conflict resolution and post-conflict peace-building in which the work of the United Nations is changing. The use of space technology can enhance preventive diplomacy, peacemaking and peace-keeping, including functions that are increasingly a part of United Nations operations, such as election supervision, crisis monitoring, refugee resettlement, cease-fire monitoring and rehabilitation and development programmes in areas affected by destructive conflicts.

19. The use of space technology in support of those United Nations efforts will enable the Organization to make more effective and efficient use of its limited resources to promote peace, security and development. An effort should be made by Member States, wherever possible, to put at the disposal of the United Nations those space technologies and systems which would support the expanding international security role being assumed by the Organization. The Organization will be examining its requirements in satellite services and the equipment needed to use those services, as well as considering the possibility of making formal arrangements with Member States or other international organizations for regular access to space systems to meet its needs.

II. ENHANCING SECURITY THROUGH SPACE TECHNOLOGY

A. International space policy

20. Since its establishment by the General Assembly in 1959, the Committee on the Peaceful Uses of Outer Space has been the focal point of international political and legal discussions regarding outer space. The Committee has elaborated five international legal instruments and four sets of principles which provide the framework for international space law and policy. Those space treaties have been ratified by many Governments, and many others abide by their principles. In view of the importance of international cooperation in developing the norms of space law, and their important role in promoting international cooperation in the use of outer space for peaceful purposes, I call upon all Member States that have not yet become parties to the international treaties governing the uses of outer space 2/ to ratify or accede to those treaties as soon as feasible.

21. Consistent with the new international political environment, a spirit of consensus and compromise has been evident in recent sessions of the Committee. Member States should make every effort to ensure that this new commitment to cooperation continues to develop in order to facilitate resolution of the issues currently before the Committee, including protection of the space and Earth environment, and the application of the principle that the exploration and utilization of outer space should be carried out for the benefit of all countries. In order further to

enhance international security, Member States might, where appropriate, consider the elaboration, through the Committee, of additional standards to ensure the safety and orderly conduct of space operations.

B. Arms control and disarmament

22. As called for by the General Assembly, the Conference on Disarmament in 1985 established the Ad Hoc Committee on the Prevention of an Arms Race in Outer Space to consider issues related to the prevention of an arms race in outer space, existing agreements governing space activities, and existing proposals and future initiatives on the prevention of an arms race in outer space. The Ad Hoc Committee has been a valuable forum for the discussion of those issues, and for the analysis of various proposals offered by Member States. Proposals considered by the Committee can be grouped into two general categories, namely, (1) comprehensive proposals and (2) proposals relevant to specific aspects of preventing an arms race in outer space.

23. Although many useful concepts and proposals for preventing an arms race in outer space have been considered in the Conference on Disarmament, no substantive agreements have been reached in over 10 years of deliberations on any specific proposal. This has been primarily a result of cold war tensions. Now, with the easing of those tensions and a greater degree of cooperation among the major space Powers, there is an opportunity to re-energize the discussions on those issues in the Ad Hoc

Committee on the Prevention of an Arms Race in Outer Space. I therefore call on Member States to review the situation and take the necessary steps to enable the Ad Hoc Committee to reach agreement on substantive and effective measures to prevent an arms race in outer space.

C. Scientific and technical cooperation

24. A key element of cooperation in the peaceful uses of outer space is expanding the availability of space technologies and applications so that all countries may benefit from them. The United Nations is actively involved in promoting and facilitating technical cooperation among Member States and in assisting developing countries in the use of space technology for development.

25. The improved international security environment has facilitated broader and deeper cooperation among countries in the peaceful uses of outer space. As part of the organization and planning process for International Space Year in 1992, 29 national space agencies and organizations from both developed and developing countries participated in the Space Agency Forum for International Space Year, with the Office for Outer Space Affairs of the United Nations Secretariat participating as an associate member. The Forum was notable for its innovative organization, which was informal and unstructured, without a permanent staff and therefore with few overhead costs. That organization was highly successful in developing a wide variety of projects loosely grouped around the central theme of "Mission to Planet Earth". For each project, one space

agency took the lead and other members were free to participate in accordance with their interests and capabilities.

26. Although International Space Year is now concluded, the members of the Forum for the Year have proposed continuing their work as the Space Agency Forum. That proposal was based on the need to continue coordination of the many ongoing International Space Year projects, and on the overwhelming success of the Forum for the Year in developing international collaboration in the peaceful uses of space technology, particularly for the study of the global environment. I support that proposal.

27. The United Nations should continue to support the cooperative work developed by the Space Agency Forum for International Space Year and become more involved in the activities of the proposed Space Agency Forum. Member States are urged to increase their participation in ongoing projects begun during the Year and in any new programmes that are established. Members of the Forum for the Year are urged to expand the involvement of developing countries, even those with very limited space capabilities, in the work of the proposed Forum. By doing so, the United Nations and the Forum together can ensure that the excitement generated by International Space Year continues to grow, together with the accelerated pace of international cooperation in the peaceful uses of outer space which resulted from its celebration.

D. Commercialization of space activities

28. The commercialization of space activities which has taken place over the past decade also presents new opportunities and challenges for the international community. It is a positive development because the diffusion of space technologies into the commercial market-place has allowed more countries to reap the benefits of those technologies and has produced a variety of spin-off benefits from them.

29. However, commercialization of certain space technologies, particularly remote sensing imagery, has resulted in high costs which many developing countries cannot afford. Those high costs are limiting developing country access to vital information just when commercialization suggests it will become available to them. A less visible, but equally problematic, effect of commercialization is the tendency of developing countries to invest scarce resources in space systems and technologies that are operated primarily by foreign consultants or contractors, rather than investing in the education and training that is necessary to develop local expertise and competence in the use of space systems and technologies.

30. The international community, particularly those countries with space capabilities, should therefore take steps to make space services, including remote sensing data, available to all interested countries at affordable prices. Consideration might be given, for example, to flexible pricing arrangements with commercial prices for

commercial users and non-commercial prices for non-commercial users. Arrangements should also be made to enable users in developing countries to become more involved in the planning and development of space technologies and systems to ensure that future systems are designed to meet the needs of all countries. In general, efforts need to be made to enable as many countries as possible to participate in the production of space technology, rather than leaving the majority to be only consumers of what others design, produce and operate.

31. Space activities and space technology generate benefits not only directly but also by serving as a driving force for technological advancement in other areas. New materials, new data processing techniques and other developments emerging from space activities can stimulate advances in health care, education and other fields. Ensuring that all countries have the opportunities to participate in space activities helps to ensure that all countries can benefit from those spin-offs.

III. NEW APPROACHES TO SPACE AND SECURITY

A. Confidence-building measures

32. Increased international cooperation between the space Powers has contributed to increased transparency in space activities, an important factor in assuring other countries of the peaceful nature of space technology. While transparency is not a substitute for broader cooperation, it does promote confidence-building in the international community.

33. The United Nations recognizes the need to promote more transparency in space activities and to institute a system of confidence-building measures for them. On the recommendation of the General Assembly (resolution 45/55 B of 4 December 1990), I have convened a panel of experts on confidence-building measures in outer space which will present its report later this year. Careful consideration should be given to the conclusions and recommendations of that panel in order to determine how they can be implemented to strengthen international security in the new global political environment.

34. A number of confidence-building measures have previously been proposed, but have not been acted upon, in part because of the cold war political environment. In the new political context, it may now be useful to re-examine some of those proposals and consider whether they could not provide a basis for agreement and action.

35. In 1978 France proposed an international satellite monitoring agency as a basis for international monitoring of disarmament agreements and international crises. The technical, legal and financial implications of establishing such an agency were the subject of a report prepared by an international group of experts appointed by the Secretary-General and issued in 1981. 3/ As envisaged in that report, the agency would be responsible for collecting, processing and interpreting data gathered by Earth observation satellites and disseminating monitoring and verification information. A full and independent capability would ultimately require data processing facilities, ground receiving stations and satellites, but the agency could be developed incrementally, beginning with facilities for processing and interpreting data acquired from other sources.

36. The General Assembly, in its resolution 37/78 K of 9 December 1982, requested the Secretary-General to report to it at its thirty-eighth session on the practical modalities for implementing the conclusions of that report. In his report to the General Assembly at its thirty-eighth session (A/38/404), the Secretary-General concluded that the Assembly should decide on a process and a legal framework for the establishment of an international satellite monitoring agency. Owing to the cold war, no substantive progress was made on the issue in the General Assembly.

37. Subsequently, the Soviet Union called for the establishment of a world space organization with some similar functions and, more recently, the Russian Federation

and France have reiterated their support for an international satellite monitoring agency. Recent political developments suggest that some of the concerns previously expressed by other major space Powers about this matter may have been allayed. I therefore believe that Member States should now give serious consideration to the feasibility of establishing an international satellite monitoring agency to improve the transparency of military operations, in space and on the ground, and to improve the international community's capabilities for monitoring disarmament agreements, crisis areas and the proliferation of military space technologies. This would, in turn, improve the operational and financial effectiveness of United Nations preventive diplomacy, peace-keeping and peacemaking operations. I would note that developments in satellite remote sensing since 1981 have considerably improved the technical feasibility of such an agency.

38. In September 1992, France called for the establishment of an international launch notification centre which, under United Nations auspices, would reinforce confidence with regard to all space launch activities, both civilian and military. Countries would provide the centre with advance notification of all launch activities, including those of ballistic missile tests. Other details of the proposed centre have not yet been fully defined, but I believe the proposal warrants further investigation by the competent United Nations bodies and the international community.

39. In a similar proposal, France also, calls for the establishment of an international trajectography centre, "UNITRACE", under United Nations auspices, to monitor the trajectories of all satellites in Earth orbit. Membership of the centre would be open to all countries on a voluntary basis, and it would warn the concerned parties when the trajectories of space objects indicated that they might interfere with each other. Such functions would build confidence regarding the peaceful intentions of space activities and increase the safety of space operations.

40. To establish an independent centre for these purposes would require substantial facilities and expenditures of hundreds of millions, if not billions, of dollars, which may not be feasible at this time. None the less, the goals of UNITRACE remain valid and their implementation could be a valuable confidence-building measure. Member States should therefore consider whether the UNITRACE functions could be fulfilled on the basis of information provided by Member States with space tracking capabilities. Funding for facilities to analyse the received data would still be necessary, but this would be a fraction of the cost of dedicated tracking capabilities. I believe that cooperation in the establishment of UNITRACE would in itself promote confidence among Member States and lead to other cooperative measures to use space to enhance international security.

41. A still more ambitious measure to utilize space technology in this domain would be the establishment of a multilateral missile early warning and defence system, as

has been discussed by the super-Powers. Such a proposal would not have been seriously considered even a few years ago, but recent political developments suggest that it might be considered now. While it could greatly enhance international security by decreasing the threat from ballistic missiles, it is still an idea that must be approached with caution. Any multilateral system open to some countries but not to others or a system based on secret technology would be likely to engender distrust and the opposition of those countries which might feel that they were being discriminated against. It would therefore be important, in further defining the concept of a multilateral defence system, that consideration be given to ensuring that the planning, development and operation of such a system was perceived to serve the security interest of the whole globe.

42. Other confidence-building measures proposed in the Conference on Disarmament that might be reconsidered to determine their relevance and utility in the post-cold-war era include the strengthening of the 1975 Convention on Registration of Objects Launched into Outer Space, the elaboration of a code of conduct for space activities, and the establishment of "keep-out zones" around satellites in orbit.

43. It should be noted that international consensus is crucial for the implementation of any confidence-building measures in space. Member States are urged to explore these issues in the appropriate forums with a view to implementing measures that will contribute to increased transparency in space activities, cooperation among States

in conducting those activities, and the enhancement of international security through the use of space technology. The report of the panel of experts on confidence-building measures in outer space will contain further proposals for consideration.

B. Improving access to space technology

44. For countries to be able to use space technology for ensuring their economic and environmental security, they must have access to the technology and know how to use it. Providing opportunities for education in the applications of space technology is therefore a key element in making space applications available to all countries. The United Nations Organization plays an important role in ensuring access for all countries to the knowledge and skills required. I urge all Member States actively to support United Nations initiatives in this area.

1. United Nations initiatives

(a) Regional centres for space science and technology education

45. Recognizing that it is essential for developing countries planning to establish indigenous programmes using space technology to have a cadre of individuals educated in the development and use of such technology, the General Assembly, in resolution 45/72 of 11 December 1990, endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that an effort be initiated

to establish regional centres for space science and technology education in the developing countries.

46. The proposed centres, to be housed in a major university or space-related institution in each region, will initially focus on remote sensing technology and applications in various fields of resource management and environmental monitoring. A priority of the centres will be to educate educators at the university level and research and applications scientists to integrate remote sensing into existing curricula in the physical, natural and environmental sciences, as well as to build a database of remote sensing data for the region.

47. The Office for Outer Space Affairs has conducted much preliminary work for the establishment of those centres, 4/ but the main limiting factor continues to be a lack of the necessary funds. Considering that the centres are to be established through voluntary contributions, I strongly urge Member States to consider providing the funds that are needed to establish them.

(b) International space education service

48. The global reach of satellite communications systems makes them ideal for transmitting and broadcasting information to remote and rural areas which otherwise remain outside the reach of traditional communications networks. A number of countries have successfully used satellite systems as the basis for distribution of educational programmes to areas where adequate education was not

otherwise available. Those programmes have included education at various levels, including teacher training, technical training and university degree programmes.

49. The success of those educational programmes has convinced me that a global satellite-based education service, established perhaps under the auspices of one of the specialized agencies or international space organizations, would provide valuable support for national development. Such a service could assist countries, particularly developing countries, to develop suitable curricula for satellite-based education and provide technical assistance for establishing and operating national and regional satellite education systems. I urge Member States to consider the possibility of establishing such an international space education service and to support the efforts of the United Nations to study such a system.

(c) International space information service

50. The Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, held at Vienna from 9 to 21 August 1982, recommended that an international space information service, initially consisting of a directory of sources of information and data services, be established within the Office for Outer Space Affairs. As part of this effort the Office has published directories on education, training, research and fellowship opportunities in space science and technology and its applications and on information systems on space science and technology, and annually publishes selected papers from the seminars,

workshops and training courses of the United Nations Programme on Space Applications, focusing on space science, technology and applications in developing countries. A major purpose of those publications is to improve the exchange of information between developing countries, a need emphasized by the 1982 Conference.

51. With adequate voluntary funding, the United Nations could undertake the expansion and upgrading of the very modest information service that currently exists, perhaps by establishing a global computer-linked system which would provide users with remote access to a wide variety of information on space science and technology, and applications and spin-offs from that technology. I urge Member States to consider whether such a system would serve their interests and help meet the goal of improving access to space technologies, particularly for the developing countries.

2. National and regional initiatives

52. Member States, on their own and through regional cooperative mechanisms, can also take steps to improve the access of all countries to space technology for economic and environmental security. Several Member States already have programmes in place by which they disseminate information on the status of national space activities and scientific developments in the spin-off benefits of space technology. I applaud such programmes and urge all Member States with space capabilities to continue and expand such practices.

53. Information on remote sensing techniques and environmental monitoring is particularly needed by the developing countries, and Member States with space capabilities should consider focusing their efforts on those areas, whether by providing technical assistance for the establishment of remote sensing centres in the developing countries or by providing fellowships for training in the use of space technology for economic development and environmental monitoring.

54. Regional organizations can also assist in improving access to space technology, perhaps through the establishment of regional databases on space technology and applications for economic development and environmental monitoring. Such databases would both provide economic benefits to developing countries and promote wider participation by developing countries in cooperative space activities.

IV. CONCLUSION

55. Clearly, there are many ways in which space technology can be utilized to enhance international security. Many of the ideas I have expressed in the present report are not new, indeed some have been debated within the United Nations and other forums for decades. Others represent new and innovative responses to the changing context of space and security in the post-cold-war era.

56. The present report represents a blueprint for action to be taken by the United Nations and the international community to integrate space technology more fully into the mechanisms used to preserve and enhance international security. What is now needed is candid, open discussion among Member States and within the United Nations system and other international organizations concerned with space to determine the best methods for implementing the recommendations contained in the present report.

57. These recommendations call for bold and innovative thinking on the part of the Organization and Member States. In this new era of international relations many actions that were not even conceivable at the height of the cold war are now possible. Together we must seize the opportunity now available.

Notes

1/ *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992* (United Nations publication, Sales No. E.93.I.8 and corrigenda), vol. I: *Resolutions Adopted by the Conference,* resolution 1, annex II.

2/ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (General Assembly resolution 2222 (XXI), annex); Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (resolution 2345 (XXII), annex); Convention on International Liability for Damage Caused by Space Objects (resolution 2777 (XXVI), annex); Convention on Registration of Objects Launched into Outer Space (resolution 3235 (XXIX), annex); and Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (resolution 34/68, annex).

3/ *The Implications of Establishing an International Satellite Monitoring Agency* (United Nations publication, Sales No. E.83.IX.3).

4/ See the updated project document relating to the centres, dated 7 January 1993, prepared for the Committee on the Peaceful Uses of Outer Space (A/AC.105/534).

ANNEXES

ANNEX I

MULTILATERAL TREATIES GOVERNING SPACE ACTIVITIES

Treaty	*Content*	*Opened for signature*	*Entered into force*	*Depositaries*	*Number of parties*
Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Partial Test-ban Treaty)	Bans nuclear tests everywhere except underground. Prohibits all nuclear explosions, for military as well as for peaceful purposes, in the atmosphere, in outer space or under water.	1963	10 October 1963	Russia UK USA	119
Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty)	Provides the basic framework for the conduct of space activities, including the following principles: the exploration and use of space shall be conducted for the benefit of all countries; outer space is not subject to national appropriation by claim of sovereignty; States shall not place nuclear weapons or other weapons of mass destruction in orbit or on celestial bodies; and that the Moon and other celestial bodies be used for exclusively peaceful purposes.	1967	10 October 1967	Russia UK USA	91

Treaty	*Content*	*Opened for signature*	*Entered into force*	*Depositaries*	*Number of parties*
Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement)	Provides that States shall take all possible steps to rescue and assist astronauts in distress and promptly return them to the launching State, and that States shall provide assistance to launching States in recovering space objects that return to Earth outside the territory of the launching State.	1968	3 December 1968	Russia UK USA	80
Convention on International Liability for Damage Caused by Space Objects (Liability Convention)	Provides that a launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft, and liable for damage due to its fault in space. Also provides procedures for settlement of damage claims.	1972	1 September 1972	Russia UK USA	73

Treaty	*Content*	*Opened for signature*	*Entered into force*	*Depositaries*	*Number of parties*
Convention on Registration of Objects Launched into Outer Space (Registration Convention)	Provides that States launching objects into outer space should provide to a United Nations Register information on those objects, including date and location of launch, orbital parameters and general function of the object.	1975	15 September 1976	Secretary-General of the United Nations	36
Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement)	Reaffirms and elaborates on many of the provisions of the Outer Space Treaty as applied to the Moon and other celestial bodies, providing that those bodies should be used exclusively for peaceful purposes, that their environments should not be disrupted, and that the United Nations should be informed of the location and purpose of any station established on those bodies.	1979	11 July 1984	Secretary-General of the United Nations	9

ANNEX II

PRINCIPLES ON THE CONDUCT OF SPACE ACTIVITIES

Title	*Content*	*General Assembly Resolution*	*Date of adoption*
Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space	The precursor document to the Outer Space Treaty, the Principles set forth the basic components of international space law, including that the exploration of space be carried out for the benefit of all countries and that States be guided be the principle of cooperation and mutual assistance in all space activities.	1962 (XVIII)	13 December 1963
Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting	Provides that direct access to satellite broadcasting technology be available to all States, that direct broadcasting activities be conducted in accordance with the International Telecommunication Convention and its Radio Regulations, and that a State that intends to establish an international direct television broadcasting service via satellite should notify receiving States and should only establish such a service on the basis of agreements with any State that so requests.	37/92 (annex)	10 December 1982

Title	*Content*	*General Assembly Resolution*	*Date of adoption*
Principles Relating to Remote Seming of the Earth from Space	Provides that remote sensing should be carried out for the benefit of all countries, taking into particular account the needs of developing countries, that remote sensing activities should include cooperation and technical assistance; that remote sensing activities should promote environmental protection; and that a State acquiring data concerning another country should make that data available to the sensed State without discrimination and at reasonable prices.	41/65 (annex)	3 December 1986
Principles Relevant to the Use of Nuclear Power Sources in Outer Space	Recognize that nuclear power sources are essential for some space missions, but provides that such systems should be designed so as to minimize public exposure to radiation in the case of an accident. States launching such systems should make a safety assessment of the system available publicly and is liable for any damage caused. Principles will be opened for review and revision within two years of adoption by General Assembly	47/68	14 December 1993

INDEX

(The numbers following the entries refer to page numbers in the report and the two annexes)

A

Ad Hoc Committee on the Prevention of an Arms Race in Outer Space, 14, 15,
See also Conference on Disarmament

Agenda 21, 10, 11
See also United Nations Conference on Environment and Development

An Agenda for Peace, 12

arms control, 14
Secretary-General's report on, 5, 8

B

ballistic missiles,
as satellite launchers, 6, 7
defense, 23

C

commercialization of space activities, 5, 8, 17

Committee on the Peaceful Uses of Outer Space, 4, 11, 13, 24, 30,

Conference on Disarmament, 14, 23

confidence building measures, 19, 23, 24

conversion, 6, 7, 8
International Conference on, 7, 8
interdepartmental task force on, 8

D

direct broadcasting principles, 35,

disarmament, 5, 6, 8, 10, 14, 20, 21

E

education and training, 17, 18
24, 25, 26,
See also regional centres for space science and technology education

environmental monitoring, use of space technology for 5, 25, 28,

environmental protection, 5, 10, 11, 36

G

General Assembly, 13, 14, 20,
Resolution 2222(XXI), 30
Resolution 2345(XXII), 30
Resolution 2777(XXVI), 30
Resolution 3235(XXIX), 30
Resolution 34/68, 30
Resolution 37/78K, 20
Resolution 37/92, 35
Resolution 41/65, 36
Resolution 45/55B, 19
Resolution 45/72, 24
Resolution 47/67, 4
Resolution 47/68, 36

I

International Space Year, 4, 11, 15, 16,

international launch notification centre, 21

international satellite monitoring agency, 20, 21, 30

international space information service, 26,

international trajectography centre, 22
See also UNITRACE

L

Liability Convention, 33,

M

military uses of space technology, 6, 7, 9, 21

Missile Technology Control Regime, 10

Mission to Planet Earth, 15,

Moon Agreement, 34,

N

Non-Proliferation Treaty, 9

Nuclear Power Source Principles, 36,

O

Office for Outer Space Affairs (United Nations), 15, 25, 26,

Outer Space Treaty, 32, 34 35,

P

Programme on Space Applications (United Nations), 27,

proliferation, 5, 8, 9, 10, 21

R

regional centres for space science and technology education, 24, 25

Registration Convention, 34

remote sensing, 7, 8, 9, 17, 21, 25, 28
Principles on, 36

Rescue Agreement, 33,

S

Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82), 26,

Security Council summit (1992), 9

Space Agency Forum, 15, 16

U

United Nations Conference on Environment and Development (UNCED), 3, 10, 30
See also Agenda 21

UNITRACE, 22

V

verification, 20